## HERNIATED CERVICAL DISK

Patients under treatment by their own physician who fail to improve after four weeks - refer to a Neurologist, Orthopedic Surgeon, Physiatrist, or Neurosurgeon for consultation and/or treatment.

### I. BACKGROUND

A herniated cervical disk is a condition in which there is a protrusion of the intervertebral disk. Herniations occur most commonly through a posterolateral defect, but midline herniations may occur as well. Resulting compression of the spinal nerve root causes pain and paresthesia usually along the anatomic course of the affected nerve root. In the cervical spine, this most often occurs at the C5-6 or the C6-7 disk levels, causing pressure on the corresponding C6 and C7 nerve roots. On infrequent occasion, disk herniation or a spondylitic process can cause compression of the cervical spinal cord. This condition may then be associated with sensory or motor dysfunction in the lower extremities and bladder and/or bowel symptoms.

### II. DIAGNOSTIC CRITERIA

#### A. Pertinent Historical and Physical Findings

Neck pain is usually the first symptom and may be subsequently associated with scapular pain, upper extremity pain or paresthesia. Neck motions are frequently limited and cause an exacerbation of pain.

The neurological exam may be normal if the compressed nerve is still functional or there may be objective evidence of nerve dysfunction (atrophy, weakness, sensory alteration or altered reflex) depending upon the anatomic nerve root affected.

B. Appropriate Diagnostic Test and Examinations - Suggested Sequence After Appropriate Referral Has Been Made
(Neurologist, Neurosurgeon, Orthopedic Surgeon, or Physiatrist).

III. DIAGNOSTIC PROCEDURES

A. Plain Radiographs of the spine may be useful to rule out other conditions such as tumor, infection, fracture, congenital anomalities, and as a baseline for alignment, curvature, subluxation (flexion-extension), etc.

B. MRI is the gold standard for evaluation of the cervical spine, both bone quality and soft tissue disease. Specific contraindications for MRI are presence of metal in retina, aneurysm clip, pacemaker for heart or deep brain electrodes. Patients with anxiety may require an open MRI to avoid panic attacks.

C. Myelography is rarely indicated, and may be done with CT Scan directly following to evaluate a root compression that is equivocal on MRI. It should never be used as a primary study. This is an outpatient procedure.

D. CT may be helpful if no MRI is available but gives less information. CT may be useful in some instances where there is a specific level or bone problem that may be better delineated.

E. EMG and NCV may be indicated to sort out specific radiculopathy or conduction questions. This is not a general screening test. Rarely evoked potentials may be indicated if spinal cord problems exist. These are best ordered by a neurologist. EMG should not be ordered before four weeks following the onset of symptoms.

F. Inappropriate Diagnostic Tests

Thermography
Spinoscopy
Myeloscopy
Dermatomal Somatosensory Evoked Potential

## IV. TREATMENT

### A. Non Operative Treatment

1. Use of analgesics, anti-inflammatory medication. Avoid narcotics other than brief use only, for acute pain.

2. Intermittent traction, soft collar, heat and massage may relieve acute symptoms. Treatment longer than 2 weeks has little efficacy. Traction may be done at home, over a door, using 7-10 pounds weight for 15-20 minutes twice daily.

3. Limited bed rest may be valuable, not for more than 2-3 days on average.

4. It is important to note that physical therapy per se is generally not indicated in acute radiculopathy. The vast majority of root symptoms resolve in weeks with only anti-inflammatory medication. If neurologic signs, (particularly weakness, bowel-bladder abnormality, etc.) or significant pain are present, an early MRI is indicated, and further therapy will be guided by the findings.

## V. HOSPITAL ADMISSION

A. Non-Operative. Very few indications

1. Inability to control pain as outpatient.

2. Need for urgent MRI Scan with likelihood of surgery to follow.

B. Operative Treatment. Represents failure of conservative measures, or progression of neurologic deficit. Diagnosis should be confirmed by objective testing.

1. Laminectomy, laminotomy, foraminotomy may be done for root or cord compression.

2. Anterior disk resection and interbody fusion (auto graft, iliac crest or cadaver bone). A plate may be used to give additional stability for multi-level interbody fusions or corpectomy.

3. Posterior cervical fusion may be required for instability at one (eg. C1-C2) or several levels, with or without laminectomy. Hardware and graft bone may be required for these procedures.

Indications for discharge are absence of fever, significant swallowing problems, inability to void, presence of neurologic or wound complications, or infection.

Generally with an uncomplicated ACDF procedure patients can go home the morning after surgery. Extended anterior procedures or laminectomy will require 2-3 days.

PROTOCOL HISTORY:
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